

## **EFFECT OF INTEREST RATES ON PERFORMANCE OF COMMERCIAL BANKS IN KENYA: A CASE OF SELECTED BANKS IN KISII TOWN**

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### **Abstract**

*The success of a commercial bank depends on income and value of its assets (loans). This study focused on interest rates and their effect on performance of the commercial banks in Kenya. Descriptive research design was adopted with a target population of 153 respondents from the credit departments. Stratified random sampling was used to select a sample of 111 respondents who were administered with a structured questionnaire. The collected data was collated and coded for descriptive and inferential analyses using the Statistical Package for Social Sciences version 23. Findings revealed that Central bank (CBK) policies affect the interest rates charged (mean 4.23), interest rates charged vary depending on repayment period (mean 3.85), higher portfolio at risk (PAR) increases the number of NPLs (mean 3.77) and increased interest income promotes high performance by banks (mean 3.94). There was a statistically significant relationship between interest rates, loan provision and performance of commercial banks. The study recommended that commercial banks should effectively respond to CBK interest rate policies, minimize number of bad loans and strive to maintain low PAR.*

**Keywords:** Performance; Interest; Loan; Provision; Commercial; Banks; Rates; Portfolio; Risk;

### **1.0 Introduction**

Commercial banks play a vital role in the economic resource allocation and development of sound economies of many countries. They channel funds from depositors to investors continuously (Gorton, 2009). Banks are also vital segments of the tertiary segment and acts as the pillar of economic growth. Accordingly, banks need to be profitable (Bruno et al., 2015). The success of a bank is based on income and value of its assets. Therefore, commercial banks are the main players in the growth of the economy across the globe. However, financial performance of banks has critical implications for economic growth. Poor banking performance can lead to banking

failure and crisis. Additionally, financial performance scrutiny of commercial financial institution has been of inordinate attention since the Great Depression in the 1940's.

The performance of commercial financial institutions may be impacted by interior and exterior influences (Al-Tamimi, 2010; Aburime, 2005). These factors are categorized into bank particular (interior) and macroeconomic variables. The 2007 financial crisis resulting from credit crunch is an example of what can go wrong if the banking system does not respect risks. In this crisis, reduced interest rates, thriving housing markets and loan securitization has led to unmatched loan damages and severe consequences for the international economy.

This emphasizes the importance of the growth-risk nexus in bank lending (Dell'Ariccia & Marquez 2006; Demyanyk & van Hemert, 2009). Before the crisis, banks were more willing to offer credit but since then, the trend has been reversed and banks are now less willing to lend. Further, before the financial crisis, there was significant credit growth and lending portfolio. This was largely due to the deregulation of financial markets and the development of ICT in financial institutions (Panopoulou, 2005; Rinaldi & Sanchis-Arellano, 2006). According to Djigap and Ngomsi (2012), the key determinants which have driven credit growth highlighted in various studies are bank specific variables such as size capitalization and macroeconomic variables such as GDP and monetary policy. According to Keeton (2007), loan growth tends to be high during business expansion, while loan losses tend to be high during business contraction. He also showed that faster loan growth leads to higher loan losses (non-performing loans). This is because during a good business cycle, banks are more likely to grant loans to clients with weaker credit histories even when collaterals are low.

Since 2009, fears of sovereign amount outstanding settled in the country owing to increase private balance and government debt levels which has led to a high risk in loaning. At present the state has employed a sequence of monetary sustenance processes such as European Financial Stability Facility (Willis, 2010). Borio *et al.*, (2002) noted that during recession, problematic loans increase as a result of firms' and households' financial distress. When the economy is growing, firms request more loans and can repay them more easily and vice versa. He further showed that in Spain, bank lending is strongly pro-cyclical, and that in periods of

expansion, banks are more likely to lend credit to firms with low credit quality.

Messai and Jouini (2013) studied the determinants of non-performing loans in Spanish, Italian and Greek banks, and found that problem loans increase when the unemployment rate and the real interest rate rise and decrease when the GDP growth rate and profitability of bank's assets fall. The Pakistan economy has reached balance of payment owing to inflation and a financial crunch therefore non-performing loans have up stretched over years. The International Monetary Fund (IMF) bailed out Pakistan in 2008 to avoid a balance of payments predicament and in 2011 it added the credit to \$11.3 billion from the original of \$7.6 billion. According to Steven (2003), Pakistan's balance is negative due to political incredibility hence today non-performing assets are high in Pakistan.

In the last two decades studies have shown that commercial banks in Sub-Saharan Africa (SSA) are more profitable than the rest of the world with an average Return on Assets (ROA) of 2% (Flamini *et al.*, 2009). In the same period or so, the number of foreign banks in Africa in general and Sub-Saharan Africa in particular has been increasing significantly while on the contrary, the number of domestic banks declined (Claessens & Hore, 2012). In Liberia financial institutions during the liberation period were not effective in managing the non-performing loans in contrast to post liberation period. According to Josiane (2011) in Rwanda, good administration of NPLs is an important pillar of commercial banks operations and by extension pillar to financial affluence and solidity. In Kenya, NPLs are unavoidable burden in the banking sector. Tangible attempts have been made to enhance performance attainment of banks which depends on the systems of managing NPLs

and protecting them within acceptable levels. According to Ombaba (2013), commercial banks in Kenya have been loaning serial non-payers. The banks have diverse credit information concerning the borrowers who have subjugated the information irregularity to apply numerous credits from Kenyan banks. The borrowers have been evading paying leading to the rise in level of non-performing assets (NPAs).

Adano (2013) investigated the loan performance in Kenyan commercial banks and found that loan performance as measured by loan default is negatively related to lending rate and total loans advanced. To sustain commercial banks loaning the monetary private sector, the KCB governing council additionally relaxed the indemnity requirements that banks must meet in return for government refinancing (Weisenthal, 2011). The presence of greedy borrowers in the banking sector operation constitutes the neglect of their debts responsibilities. Therefore, the need for a central database from which combined loan data on debtors became vital and thus credit reference Bureau was created. Currently the central bureau is developed and is web enabled. The aims of central bureau are to develop and strengthen loan evaluation; storage and distribution of loan; monitoring over exposure to borrowers and facilitating consistent classification of credits (Agusto, 2012). The banking industry in Kenya has been improving the last two decades. However, this doesn't mean that all banks are profitable; there are banks declaring losses (Oloo, 2010).

According to Flaminini et al., (2009), bank specific and macroeconomic factors affect the performance of commercial banks. According to Mugwe (2013), since 2011, the rate of NPLs has been on a slow but steady rise. When NPLs are being continuously

rolled over, resources that could otherwise be invested to profitable sectors of the economy become locked up (CBK, 2011). Intuitively, these NPLs hinder economic growth and impair economic efficiency (Ongore & Kusa, 2013). According to CBK Report (2003), there was a 4.5% weakening in the pre-tax revenue for the banking sector in the year 2008. However, despite the implications of NPLs for banking crisis, for investment and economic growth, and for anticipating future banking and financial crises, very few studies have been done on the effect of interest rate on the level of non-performing loans (Kigen, 2014). Huge level of non-performing credits would bring the banking industry into a stop if the tendency is not swiftly retreated (CBK Report, 2004). The loan portfolio is typically the largest asset and the predominate source of revenue for banks in Kenya. As such, it is one of the greatest sources of risk to the bank's safety and soundness.

## 1.2 Statement of the Problem

Banking systems both locally and globally have faced a number of problems over the years for a multitude of reasons non-performing loans being one of them. The main problems brought about by NPLs are bank failure, decrease in wealth and bank investments or financing of projects to get funds for lending out (Peter, 2011). Certain commercial banks have failed in the past and shut down because of NPLs for instance the Community National Bank and First Southern Bank in USA in 2010. Covenant Bank in Chicago similarly failed and was shut down in 1998 (Elliot, 2008). Bad loans can fuel banking crisis and end up in the downfall of certain financial institutions with dire consequences on economic growth. Kane and Rice (2001) indicated that at the apex of the economic crunch in Benin, 80% of the total bank credits collection which was

about 17% of GDP consisted of non-performing loans in the late 20th century. Currently, high level non-performing loans or assets in Kenya have become a big hindrance to financial stability. According to CBK Report (2012), the stock of non-performing loans decreased to Kshs. 57.5 billion in 2012 from Kshs. 58.3 billion in 2011. In 2010 NPLs were Kshs. 61.5 billion (CBK Report, 2010). In spite of the decrease in non-performing assets in Kenya, NPLs are still high as compared to bank deposits. Other banks which have failed in Kenya are Imperial bank of Kenya in 2016, Dubai bank 2016, Chase bank in 2016 and Trust bank in 1998. Therefore, this formed the need to assess the determinants of NPL's and their effects on performance of commercial banks in Kenya.

### **Objective**

- i. Determine the effect of interest rates on performance of commercial banks in Kenya.

## **2.0 Theoretical Review**

### **2.1.1 Market Power and Efficiency**

#### **Structure Theory**

According to Olweny and Shipho, (2011), a more organized study of bank performance started in the late 1980's with the application of the Market Power (MP) and Efficiency Structure (ES) theories. The MP theory states that increased external market forces results into profit (Athanasoglou et al., 2008). Moreover, the hypothesis suggest that only firms with large market share and well differentiated portfolio (products) can win their competitors and earn monopolistic profit. On the other hand, the ES theory suggests that enhanced managerial and scale efficiency leads to higher concentration and then to higher profitability. According to Olweny and Shipho (2011), balanced portfolio theory also added additional dimension into the study of bank

performance. According to Athanasoglou et al., (2008), the internal factors include bank size, capital, management efficiency and risk management capacity. The same major external factors that influence bank performance are macroeconomic variables: interest rate, inflation, economic growth and ownership. In relation to this study, these theories are very relevant in understanding the determinants of the commercial bank performance in Kenya. The theories elaborately explain that enhanced managerial efficiency in decision making leads to higher profitability. Additionally, the theories touches on such factors as bank size, capital, management efficiency and risk capacity which are fundamental in managing non-performing loans and performance of banks.

### **2.1.2 Moral Hazard Theory**

The theory was proposed by Paul Krugman in 1960 where one decides on the risk to take and who to bear the cost. In economics, moral hazard occurs when one person takes more risks because someone else bears the cost of those risks. A moral hazard may occur where the actions of one party may change to the detriment of another after a financial transaction has taken place. Moral hazard occurs under a type of information asymmetry where the risk-taking party to a transaction knows more about its intentions than the party paying the consequences of the risk. More broadly, moral hazard occurs when the party with more information about its actions or intentions has a tendency or incentive to behave inappropriately from the perspective of the party with less information. The moral hazard problem suggests that a customer has the motivation to evade payment lest there are consequences for his future requests for loan. If creditors can never evaluate the

borrowers' wealth, the latter will be tempted to evade on the borrowing. Forestalling this, creditors will increase rates, leading eventually to the breakdown of the market (Alary & Goller, 2001) as cited in Kipyego and Wandera (2013). This theory will guide this study by ensuring that the moral obligation of both the creditor and the borrower while transacting the business of loaning and repayment. Further, the theory also touches on the factors which contribute to the rise in default and non-performing loans.

## 2.2. Empirical Review of Literature

### 2.2.1 Effect of Interest rates on Performance of Commercial Banks

Interest rate is the price a borrower pays for the use of money they borrow from a lender or financial institutions or fee paid on borrowed assets (Crowley, 2007). Interest rate as a price of money reflects market information regarding expected change in the purchasing power of money or future inflation (Ngugi, 2004). Fluctuations of market interest rates exert significant influence on the activities of commercial banks. Banks determine interest rates offered to consumers, the mortgage production line ends in the form of purchased by an investor. Consistent with portfolio theory, Boudriga, Boulila and Jellouli (2009) opines that based on the inherent risks on lending, banks seek to maximize returns by increasing interest rates. A non-performing asset (NPA) is the money lent to an individual that does not earn income and full payment of principal and interest is no longer anticipated, principal or interest is 90 days or more delinquent, or the maturity date has passed and payment in full has not been made (Boudriga et al., 2009).

Risk-averse banks operate with a smaller spread than risk-neutral banks since risk

aversion raises the bank's optimal interest rate and reduces the amount of credit supplied. Actual spread, which incorporates the pure spread, is in addition influenced by macroeconomic variables including monetary and fiscal policy activities (Emmanuelle, 2003). According to Collins and Wanjau (2011), lending money is perhaps the most important of all banking activities. Commercial banks lend a certain percentage of the customer deposits at a higher interest rate than it pays on such deposit; interest rate spread Collins & Wanjau, 2011). The cost of loan includes the principal repayments and interest rates are agreed at the time of the loan application (Caporale & Gil-Alana, 2010). According to Boudriga, Boulila and Jellouli (2009), when there is no ceilings on lending rates, it is easier for banks to charge a higher risk premium and therefore give loans to more. Hawtrey and Liang (2008) opine that interest rate spread is highly correlated with non-performing loans and narrowing of interest rate spreads is related to superior bank efficiency.

The interest rate spread in Kenya is relatively high for a long period limiting the access to loans and leading to NPLs. The factors that determine interest rate spreads include low level of savings, low supply of loans, and insufficient competition in the domestic banking system (Hou, 2012). The study of Saba et al., (2012) on the determinants of Nonperforming Loan on USA Banking sector found negative significant effect of lending rate and positive significant effect of real GDP per capital and inflation rate on NPL. Louziset al., (2010) examined the determinants of NPLs in the Greek financial sector using dynamic panel data model and found as real GDP growth rate, ROA and ROE had negative whereas lending, unemployment and inflation rate had

positive significant while loan to deposit ratio and capital adequacy ratio had insignificant effect on NPLs. However, Swamy (2012) examined the determinants of NPLs in the Indian banking sector using panel data and found that GDP growth rate, inflation, capital adequacy and bank lending rate have insignificant effect on NPLs.

Howells (2008) avers that an increase in interest rates makes savings from current income more attractive; increases repayment of existing floating-rate debt and thus lowers disposable income, with possible loan default. Besides, it increases the cost of goods obtained on credit which leads to loan defaults. Mangeli (2012) conducted a research on the association between interest rate spread and financial performance of micro finance institutions and established that interest rate spread impact performance of commercial banks since it upsurges the cost of credit charged on borrowers' protocols on interest rates and lessens ethical hazards incidental to performance. Ngumo (2012) conducted research on the impact of interest rates on financial performance of companies that provide loans in Kenya using survey research. The research resolved that loan and interest rates affect financial performance. It additionally concluded that interest rates positively relate with financial performance and through this association interest rates discourage borrowing, it raises the cost of credit charged on the debtor. Accumulation of credit evasion is attributable to high cost of credits consequently lower performance.

So the kind of interest given dictates on capability and flexibility of the debtor to pay back credit. Ngetich (2011), conducted study on the effect of interest spread on the level of non-performing assets. He concluded that interest spread impact non-performing assets in banks as it raises the cost of loans charged

on the debtor, procedures and interest rates. Were and Wambua (2013) conducted a study to establish determinants of interest rate spread of Kenya commercial banks. The empirical results showed that bank-specific factors play a significant role in the determination of interest rate spreads. These include bank size based on bank assets, credit risk as measured by non-performing loans to total loans ratio, liquidity risk, return on average assets and operating costs. Haneef and Karim (2012) found the accumulation of Non-Performing loans to be attributable to economic downturns and macroeconomic volatility, terms of trade deterioration, high interest rates.

Ongweso (2005) carried out a study on the relationship between interest rates and nonperforming loans. The study covered the period 2000-2004. The findings indicated a declining trend of average interest rates ranging from 12.00% in 2000 to 2.96% in 2004, does indicating improved macro-economic variables over the period. Further the level of non-performing loans on average declined for all the commercial banks for the period under review. Although the study found out a positive relationship between the level of interest and non-performing loans, whereby an increase in interest rates increased nonperforming loans, a test of significance however revealed a weak relationship between the two.

Kanyuru (2011) carried out a research on the determinants of lending rates of commercial banks in Kenya. She found out that cost of funds (loans) was determined by taxation policies, core liquid asset requirement, transaction cost, CBK and its regulatory role, management fees and staff costs. The research further revealed that interest rates were majorly influenced by inflation, demand for loans, foreign exchange rates and other macro and micro economic

environment factors. Kipyego and Wandera (2013) did a study on the effects of credit information sharing on Non-Performing loans. The study was done on Kenya Commercial Bank (KCB) between years 2007 to 2012. The results showed that credit information sharing has reduced NPLs as it: increases transparency among financial institutions, helps the banks lend prudently, lowers the risk level to the banks, acts as a borrowers discipline against defaulting and it also reduces the borrowing cost i.e. interest charge on loans. Kamunge (2013) undertook a study on the effects of interest rate spread on the level of Non-Performing loans by commercial banks in Kenya. The results indicated that interest rate spread and debt collection cost were statistically significant in explaining level of Non-Performing loans; a unit change in Log of interest rate spread led to a positive change in level of NPLs.

Langat, Chepkulei and Rop (2013) looked at the effect of interest rates spread on the performance of banking industry in Kenya. The findings showed that Central Bank regulations, credit risk and macro-economic environment influence the extent of interest rates spread and hence contribute to the performance of banking industry. On regulatory guidelines, Collins and Wanjau (2011) through their study established that interest rates policies and regulations are relevant in mitigating interest rates, moral hazards, and loan defaulters. The study in Kenya revealed that the Central Bank of Kenya (CBK) regulates interest rates charged by banks through interest rate ceiling (81.5 per cent). They found that the maximum value of NPA ratio was estimated to be 34.85 per cent, while the minimum value was 9.23. The regulation has, however, not been effective since commercial banks still charge high interest rates, an average of 11.5 per cent, as compared to the CBK lowered rate of

8.5 per cent (Oketch, 2011). However, despite the implications of Non-Performing loans for the commercial banking crisis, for investment and economic growth, and for anticipating future banking and financial crises, very few studies have been done on the effect of interest rate on the level of nonperforming loans (Kigen, 2014).

### 2.3 Performance of Commercial Banks

Performance of commercial banks and other financial institutions is measured through various profitability measures such as return on assets and return on equity. The return on assets is an expression of rent ability for the entirety of the banking society. It is the ratio of income to its total assets. It measures the ability of the bank management to generate income by using company assets at their disposal. ROA show how efficient the resources of a bank are used to generate income (Khrawish, 2011).

Return on equity is a financial ratio that refers to how much profit accompany has earned compared to total amount of the shareholders equity invested or found on the balance sheet. Khrawish (2011) argues that ROE is the ratio of net income after taxes divided by the total equity capital .It represents the rate of return earned on the funds invested in the bank by its stockholders .The better the return on equity the more effective the management in utilizing the shareholders capital.

Stuti and Bansal (2013) stated that the best indicator for the health of the banking industry in a country is its level of Nonperforming assets (NPAs). Nonperforming loans reflects the performance of banks. Decline in the ratio of Nonperforming loans indicates improvement in the asset quality of public sector banks and private sector banks. Increase in the ratio of nonperforming loans

to total loans on the other hand should worry commercial banks. Non-performing Assets are threatening the stability and demolishing bank's profitability through a loss of interest income, write-off of the principal loan amount itself. Mohammed (2012) studied the bank performance in context of corporate governance for which mainly the ratios of non-performing loans and loan deposits have been used in Nigeria. He found that non-performing loans ratio has significant negative effect while loan deposit ratio has insignificant negative effect on performance. The determinants of bank performances can be classified into bank specific (internal) and macroeconomic (external) factors (Al-Tamimi, 2010; Aburime, 2005). These are stochastic variables that determine the output. Internal factors are individual bank characteristics which affect the banks performance. These factors are basically influenced by internal decisions of management and the board. The external factors are sector-wide or country-wide factors which are beyond the control of the company and affect the profitability of banks. The overall financial performance of banks and NPLs affect the bank's liquidity and profitability which are the main components for the overall efficiency of the bank. Therefore, the determinants of NPLs should be given a due consideration because of its adverse effect on survival of banks (Badar& Yasmin, 2013).

Low cost efficiency is a signal of poor management practices, thus implying that as a result of poor loan underwriting, monitoring and control, NPLs are likely to increase. Hou (2012) who found a direct link between loan quality and cost efficiency. Inaba, Kozu and Sekine (2008) posited that there exists a trade-off between allocating

resources for underwriting and monitoring loans and measured cost efficiency. Banks which devote less effort to ensure higher loan quality are more cost-efficient; however, there is a corresponding burgeoning number of NPLs in the long run. Watanabe and Sakuragawa (2008) examined empirically the relation between cost efficiency and non-performing loans and concluded that there is a high negative significant correlation. On the other hand, Vogiazas and Nikolaïdou (2011) established that low cost efficiency is positively associated with increases in future non-performing loans and links this to 'bad' management with poor skills in credit scoring, appraisal of pledged collaterals and monitoring borrowers.

Moreover, Chien & Danw (2004) indicated in their research that firm performance assessment focus only on operational effectiveness and functional efficiency which may directly impact the existence of a firm. The empirical outcome of this research is that a firm with better effectiveness does not always mean that it has better efficiency. Liquidity is another factor that determines the level of commercial bank performance. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. Ilhomovich (2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said & Tumin, 2011). Studies have shown that bank performance can be affected by internal and external factors (Athanasoglou *et al.* 2008; Al-Tamimi, 2010; Aburime, 2009).

## 2.4 Conceptual Framework

### Independent Variables

### Dependent Variable

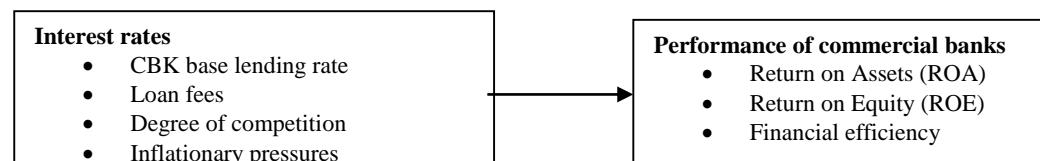


Figure 2.1 conceptual framework

## 3.0 Research Methodology

### 3.1 Research Design

According to Kombo et al. (2002), research design is the scheme; outline or plan that is used to generate answers to research problems. The study adopted a descriptive research design. This is because it permits the collection of data through questionnaires administered to a sample quickly, efficiently and accurately (Oso & Onen, 2005).

### 3.2 Study Area

The study involved all commercial banks in Kisii town which is found in the western part of Kenya about 370km from Nairobi alongside Kisumu Nairobi highway. Kisii town is the main urban and commercial centre having a large metropolitan population. The study was confined to the credit departments of the commercial banks in Kisii town.

### 3.3 Target population

The study targeted a population of 153 employees in the credit sections of the commercial banks. The target population comprised of 17 branch managers, 25 credit managers and 111 credit officers from the 17 commercial banks operating in Kisii town.

### 3.4.1 Sample Size

The purpose of sampling is to secure a representative group which enabled the researcher to gain information about an entire population when faced with limitations of time, funds and energy. The sample size was determined using the mathematical approach by Miller and Brewer (2003):

$$n=N/[1+N(\alpha)^2] \dots \text{Equation (3.1)}$$

Where,  $n$  is the Sample size,  $N$  is the Sampling frame (153),  $\alpha$  is the Error margin (0.05) and 1 is the Constant.

$$n=153/[1+153(0.05)^2]$$

$$n=111$$

### 3.4.2 Sampling Frame

A sampling frame is a list of all the items from which a representative sample is drawn for the purpose of research (Silverman, 2005). The sample frame comprised of 153 respondents from the credit section of the commercial banks in Kisii.

**Table 3.1: Target Population**

No.	Strata	Target population
1	Branch Managers	17
2	Credit Managers	28
3	Credit Officers	108
	<b>Total</b>	<b>153</b>

### 3.4.3 Sampling Technique

Stratified random sampling was used to select a sample size of 111 bank employees from target population of 153 bank employees. Saunders *et al.*, (2009) argued that dividing the population into series of relevant strata means that the sample is more likely to be representative as one can ensure proportional representation within the sample. Bryman and Bell (2007) pointed out that stratified sampling ensures that the resulting sample is distributed in the same way as the population in terms of the stratifying criterion.

**Table 3.2: Sample Distribution**

No.	Strata	Target population	Sample Size
1	Branch Managers	17	12
2	Credit Managers	28	20
3	Credit Officers	108	78
	<b>Total</b>	<b>153</b>	<b>111</b>

### 3.5 Data Collection

The study used a structured questionnaire to collect data from the sampled respondents. Questionnaires are research instruments used to collect information geared towards addressing specific objectives (Kombo *et al.*, 2002). The questionnaires are cost effective, time saving and upholds individual opinions with minimal interference from the researcher (Mugenda & Mugenda, 2003). The questionnaire were based on a 5 point Likert scale as the main mode of data collection (5, 4, 3, 2, 1) where 5-strongly agree, 4-agree, 3-neutral, 2-disagree and 1- strongly disagree.

### 3.6 Types of Data

The study collected primary quantitative data from the participants working in the commercial banks operating in Kisii town using a structured research questionnaire.

### 3.7 Instrumentation

Prior to conducting the main study, a pilot study was conducted in five commercial banks in the neighboring Nyamira town to test the reliability and validity of the research

instrument. Validity is the degree to which an instrument measures what is supposed to measure (Kothari, 2004) while reliability refers to a measure of the degree to which research instruments yield consistent results (Mugenda & Mugenda, 2003).

### 3.8 Validity of the Instrument

Validity is the accuracy and meaningfulness of inferences, which are based on the research results (Mugenda & Mugenda 2003). Validity is also the degree to which an instrument measures what is supposed to measure (Kothari, 2004). The validity of the research instrument was established through consultation with the research supervisor. Furthermore, the questionnaire was subjected to pre-test to detect any deficiencies in it. Comments and suggestions made by the pre-test respondents were incorporated in order to address some insufficiencies in the questionnaire.

### 3.9 Reliability of the Instrument

Reliability is a measure of the degree to which a research instrument yields consistent

results after several trials (Mugenda & Mugenda, 2003). According to Kombo & Tromp (2006), reliability is the extent to which results are consistent overtime. Reliability of the research instrument was calculated using Cronbach's coefficient alpha for either even or uneven items based on the order of number of arrangement of the questionnaire items. A correlation coefficient greater or equal to 0.7 is acceptable (George & Mallery, 2003). Field (2005) observes that a Cronbach's  $\alpha > 0.7$  implies the instrument provides a relatively good measure. Prior to conducting the main study, a pilot study was conducted in five commercial banks in neighbouring Nyamira town to test the reliability and validity of the research instrument. A Sample size of 11 respondents, (10% of the study sample) as recommended by Mugenda and Mugenda (2003) was selected and administered with the questionnaires. The response rate was 100%. The Cronbach's Alpha Test was then conducted and all the three variables gave Cronbach's Alpha values which were greater than 0.7. According to George and Mallery (2003), Cronbach correlation coefficients greater or equal to 0.7 are acceptable. Field (2005) observes that a Cronbach's  $\alpha > 0.7$  implies that the instrument provides a good measure. These results of the pilot test were not included in the final data analysis of the study.

**Table 3.3: Reliability Test Results**

Variable	Number of Items	Cronbach's Alpha Value
Interest Rate	7	.796
Loan Provision	6	.788

### 3.5.3 Data Collection Procedure

Data collection as defined by Kombo et al. (2002) is the process of gathering specific information aimed at proving or refuting some facts. Prior to issuing of the

questionnaire, the necessary permit was obtained from the relevant authorities for ethical considerations. The questionnaire was self-administered using drop-and-pick later method after one week to allow the participants enough time to fill the questionnaires.

### 3.6 Data Analysis and Presentation

The data collected was coded and analyzed using the Statistical Package for Social Sciences (SPSS version 23) tool. Both descriptive analysis and inferential analysis were used. Further, regression analysis was conducted to test if the strength of the relationship between independent variables and dependent variable is statistically significant. The findings were presented using frequency distribution tables and figures. The study assumed a linear relationship between the independent variables and the dependent variable and adopted the Ordinary Least Square Method of estimation (OLS) in examining the following multiple linear regression model.  $\epsilon$  is an error term normally distributed about a mean of 0

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon \quad \dots \dots \dots \text{Equation (3.2)}$$

Where:  $Y$  is the dependent variable (Performance of the commercial banks),  $\alpha$  is the regression coefficient/constant/Y-intercept,  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are the coefficients of the linear regression equation while  $X_1$ = Interest Rate,  $X_2$ = Loan Provision

## 4.0 Research Findings and Discussion

### 4.1 Response Rate

The study targeted a sample size of 111 participants out of which 98 were completely well filled and consequently used for data analysis.

**Table 4.1: Response Rate**

Respondents	Frequency	Percent (%)
Respondents	98	88.3
Non-respondents	13	11.7
<b>Total</b>	<b>111</b>	<b>100.0</b>

From Table 4.1, the response rate of the study was 88.3%. This response was very encouraging and representative of the target population. Cooper and Schindler (2003) argues that a response rate exceeding 30% of the total sample size provides enough data that can be used to generalize the characteristics of a study problem as expressed by the opinions of few respondents in the target population.

## 4.2 Demographic Characteristics of the Respondents

The study found it crucial to ascertain the demographic information of the participants since it plays a great role in determining the

**Table 4.2: Gender Distribution of the Respondents**

Gender	Frequency	Percent (%)
Male	53	54.0
Female	45	46.0
<b>Total</b>	<b>98</b>	<b>100.0</b>

The study established that there were more male participants (54.0%) than female participants (33.3%) in the banking industry in Kisii town as illustrated in Table 4.2. This implies that more men than women are employed in the banking industry.

### 4.2.2 Age Categories of the Participants

This section analyzes the age categories of the participants in the study. The study sought to determine the age categories of the participants and from the findings in Table 4.3, majority (45.8%) were aged between 31 and 35 years followed by those aged between 26 and 30 years respectively. 8.1% were aged between 20 and 25 years. The findings imply that majority of the commercial bank employees in Kisii town are relatively young in age.

**Table 4.3: Age of the Participants**

Age	Frequency	Percent (%)
20-25 years	8	8.1
26-30 years	30	30.6
31-35 years	45	45.8
Above 35 years	15	15.3
<b>Total</b>	<b>98</b>	<b>100.0</b>

nature of information provided in terms of accuracy. The analysis relied on the information of the participants to classify the different results according to their knowledge and responses. The demographic data consisted of age, sex/gender, and age categories in years, and level of education, role in the banking industry and working experience in the banking sector.

### 4.2.1: Gender Distribution of the Participants

This section analyzed the gender distribution of the respondents who participated in the study.

#### 4.2.3 Education Level of the Participants

From the study findings, it was established that majority of the participants attained degree level of education (46.9%) as shown in Table 4.4. This was followed by those who had attained masters' level of education (37.8%) and diploma at 15.3% respectively. The findings implying that the majority of the participants were well educated to understand and answer the research questions appropriately. According to Murphy and Myors (2004), the level of education determines the participants' ability to understand and answer survey questions.

**Table 4.4: Education Levels of the Participants**

Level	Frequency	Percent (%)
Diploma	15	15.3
Degree	46	46.9
Masters	37	37.8
Doctorate	0	0.0
<b>Total</b>	<b>98</b>	<b>100.0</b>

#### 4.2.4 Roles of the Participants in the Banking Industry

The study sought to establish the roles the participants played in the commercial banks in Kisii town. From the findings in Table 4.5, credit officers (53.1%) were the majority followed by credit managers (33.6%) and branch managers (13.3%) respectively. The findings show a relatively balanced distribution of the participants in the sample size implying the study benefited from a variety of opinions and responses to the questions.

**Table 4.5: Role of Participants in the Banking Industry**

Level	Frequency	Percent (%)
Branch Manager	13	13.3
Credit Managers	33	33.6
Credit Officers	52	53.1
<b>Total</b>	<b>98</b>	<b>100.0</b>

#### 4.2.5 Working Experience in the Banking Industry

The participants were asked to indicate their working experience in the commercial banking sector in Kisii town as shown in Table 4.6. The study established that majority (32.7%) of the participants had worked for between 5 to 10 years followed by those who had worked for between 0 and 5 years (28.6%). Those who had worked for over 20 years were the least (6%).

**Table 4.6: Working Experience in the Banking Industry**

Department	Frequency	Percent (%)
0-5 years	28	28.6
5-10 years	32	32.7
11-15 years	24	24.5
16-20 years	8	8.2
Above 20 years	6	6.0
<b>Total</b>	<b>98</b>	<b>100.0</b>

The results imply that majority of the participants had sufficient experience in the commercial banking industry to effectively and sufficiently provide the information sought by the study.

### 4.3 Effect of Interest Rates on Performance of Commercial Banks

This section provides an analysis of the interest rates, the first objective of the study on the performance of commercial banks in Kisii town.

#### 4.3.1 Descriptive Analysis of Interest Rate

In order to determine the effect of interest rates on the performance of commercial banks, the participants were asked to respond to a set of statements on a five point likert scale. The first statement was on how CBK policies affect the interest rate of commercial banks. As shown in Table 4.7, the mean score for responses was 4.23 indicating that a majority of the participants were in agreement in their responses to the statement. The standard deviation indicates that a majority of the responses did not vary from the mean by more than 0.439. The second statement sought to determine whether interest rates charged are influenced by high competition for market by different banks. A mean of 3.15 suggests that a majority of the participants were neutral with the statement.

The standard deviation indicates that the responses did not vary from the mean score by more than 1.068 deviations. The third statement asked participants whether the inflationary pressures cause interest fluctuations and hence non-performing loans. A mean score of 3.85 implies that majority of the respondents were in agreement with the statement. The responses did not vary from the mean score by more than 0.689. The fourth statement sought to establish whether interest rates charged vary depending on the loan repayment period. Majority of the participants were strongly in agreement with a mean score of 3.85 and standard deviation of 1.345. The fifth statement sought to determine whether some clients have lost collaterals to the bank due high interest rates. The majority of the participants were in agreement with a mean score of 3.08 and standard deviation of 1.188. The study also asked the participants in the sixth statement whether interest rate spread by banks is high and therefore lead to non-performing loans. The majority of the participants were neutral with a mean score of 3.38 and standard deviation of 1.261.

**Table 4.7: Effect of Interest Rates on Performance of Commercial Banks**

Statements on Interest rates	N	Min	Max	Mean	Std. Deviation
1. CBK policies affect the interest rate of commercial banks.	98	1	5	4.23	.439
2. Interest rates charged are influenced by high competition for market by different banks.	98	1	5	3.15	1.068
3. Inflation pressures cause interest fluctuations and hence non-performing loans.	98	1	5	3.85	.689
4. Interest rates charged vary depending on the loan repayment period.	98	1	5	3.85	1.345
5. Some clients have lost collaterals to the bank due high interest rates.	98	1	5	3.08	1.188
6. Interest rate spread by banks is high and therefore leads to non-performing loans	98	1	5	3.38	1.261
7. High loan application and processing fees increases non-performing loans.	98	1	5	2.38	1.387

The study in the seventh statement sought to determine whether high loan application and processing fees increases non-performing

loans. A mean score of 2.85 and standard deviation of 1.387 indicates that majority of the respondents were neutral and with

divergence views in their responses to the statement. The results are congruent to those of Ngumo (2012) who conducted research on the impact of interest rates on financial performance of companies that provide loans in Kenya. The research resolved that loan and interest rates affect the financial performance.

#### 4.3.2 Correlation between Interest Rates and Performance of Commercial Banks

Correlation analysis was done to investigate the existence and nature of relationship

**Table 4.8 Correlation between Interest Rates and Performance of Commercial Banks**

		Interest Rates
Pearson Correlation		.731**
Sig. (2-tailed)		.000
Performance	N	98

\*\*. Correlation is significant at the 0.01 level (2-tailed).

The finding is consistent with Boudriga, Boulila and Jellouli (2009) who opines that based on the inherent risks on lending, banks seek to maximize returns by increasing interest rates. The findings also support Collins and Wanjau (2011), that lending money is perhaps the most important of all banking activities, for the interest charged on loans is how the banks earn cash flows.

#### 4.6 Performance of Commercial Banks

This section provides the results on the analysis of financial performance of the commercial banks using primary data. The study sought to analyze the performance of

between interest rates and the performance of commercial banks. From the analysis in Table 4.8, it was noted that there was a strong significant and positive correlation ( $r = 0.731$ ) between interest rates and the performance of commercial banks. The significance level is 0.000 which is below 0.05 ( $p < 0.05$ ) implying that the relationship between interest rates and performance of commercial banks is significant.

commercial banks as illustrated in Table 4.9. The first statement sought to determine whether banks with low portfolio at risk perform better in banking industry. The mean score was 3.92 with a standard deviation of 0.956 indicating the participants were in agreement and cohesive on their responses to the statement. The second statement sought to establish whether increased interest income promotes high performance by banks. Majority of the participants with a mean score of 3.94 and a standard deviation of 0.780 indicated that the participants were in agreement with the statement.

**Table 4.13: Performance of Commercial Banks**

	Statements on Performance of Banks	N	Min	Max	Mean	Std. Deviation
17.	Banks with low portfolio at risk performs better in banking industry	98	1	5	3.92	.956
18	Increased interest income promotes high performance by banks	98	1	5	3.94	.780
19.	Reduced credit losses due to minimal number of non-performing loans improves bank performance	98	1	5	3.71	.857
20.	Low bank operation costs enhance bank performance.	98	2	5	4.15	1.068
21.	Low inflationary pressures stabilizes base lending rates and performance of the banks	98	2	5	3.92	.807
22.	Improved Rate of dividends increases the performance of commercial banks	98	1	5	2.95	.987

The third statement asked the respondents whether reduced credit losses due to minimal number of non-performing loans improve bank performance. The findings indicate that the majority of the participants were in agreement with a mean of 3.71. A standard deviation of 0.857 implies the participants were cohesive in their responses to the statement. This finding is congruent to Dang (2011) who posited that adequate level of liquidity is positively related with bank profitability. The fourth statement sought to ascertain whether low bank operation costs enhance bank performance. The mean score was 4.15 with a standard deviation of 1.068 indicated that the participants were in

agreement with the statement on low operation costs. The fifth statement asked the participants whether low inflationary pressure stabilizes base lending rates and performance of the commercial banks. The mean score was 3.92 with a standard deviation of 0.807 indicate that the respondents were in agreement and cohesive in their responses to the statement. The study sought to determine whether improved rate of dividends increases the performance of commercial banks. A mean score of 2.95 and standard deviation of 0.987 imply that majority of the participants were neutral and cohesive in their responses.

#### 4.7 Multiple Regressions Analysis

Multiple regression analysis was conducted to determine the relationship between the determinants of non-performing loans and their effects on performance of commercial banks in Kenya as shown in Table 4.14.

**Table 4.14: Regression Coefficients**

Model	Un-standardized Coefficients			Standardized Coefficients		
	1	B	Std. Error	Beta	t	Sig.
(Constant)		1.552	1.721		1.767	.0341
Interest Rates		0.712	0.321	0.361	3.315	.0235
Loan provision		0.709	0.402	0.291	3.264	.0244

a. Dependent Variable: Performance of Commercial Banks

Substituting the values in the equation:

$$Y_i = \alpha + \beta_1 X_1 + \beta_2 X_2$$

$Y_i$  represent the Performance of the commercial banks,  $\alpha$  is the regression coefficient/constant/Y-intercept,  $\beta_1$  and  $\beta_2$  are the coefficients of the linear regression equation and  $X_1$ = Interest Rate,  $X_2$ = Loan Provision

$$Y = 1.552 + 0.712X_1 + 0.709X_2$$

The beta values obtained were used to explain the regression equation. The standardized beta coefficients give a measure of influence of each variable to the model and indicate how much the dependent variable varies with an independent variable when all other independent variables are held

constant. The regression model established that taking all factors into account (Interest rates, Loan size and Loan provision) at zero, the constant is 1.552 as presented in Table 4.14. The findings imply that taking all the other independent variables at zero, a unit increase in interest rates leads to a 0.712 increase in the performance of commercial

banks; a unit increase in loan provision leads to 0.709 increase in the performance of commercial banks.

#### 4.7.1 Regression Model Summary

The researcher conducted a multiple regression analysis to analyze factors affecting the performance of commercial banks. The Regression model summary in Table 4.13 shows that the two predictor variables account for 49.2% of the total variation in the performance of commercial banks because the 'R square' value is 0.492.

**Table 4.15 Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.5734 <sup>a</sup>	0.492		
a. Predictors: (Constant), Interest rates, Loan size and Loan provision.				

This finding is consistent with Toole (2013) who posited that a model that yields an R square value above 0.25 is considered to be of good fit in social sciences. Therefore, further research should be conducted to investigate the other determinants constituting 50.8% which affect the performance of commercial banks in Kisii town.

### 5.0 Summary of Findings, Conclusion and Recommendations

#### 5.1 Summary of Findings

The objective sought to find the effect of interest rates on the performance of commercial banks. The study found that CBK policies affect the interest rate of commercial banks to a great extent. Further, the study found that interest rates charged by commercial banks are influenced by high competition for market or customer base. Also, the study found that interest rates charged by commercial banks vary depending on the loan repayment periods. In

addition, the study found that interest rates affect the performance of commercial banks.

#### 5.2 Conclusions of the Study

The study concluded that inflation pressures cause interest fluctuations and therefore lead to non-performing loans in the commercial banks. Further, interest rates charged by commercial banks vary depending on the loan repayment periods. The study also concluded that CBK policies affect the interest rate of commercial banks to a great extent. Further, the study concludes that interest rates charged by commercial banks are influenced by high competition for

#### 5.3 Recommendations of the Study

The commercial banks should charge favorable loan application and processing fees to reduce non-performing loans. This will enable the reduction of loan default rates. The study recommends that the rate of inflationary pressure be checked so as to minimize the number of non-performing loans held by commercial banks. The CBK policies should be standardized to check on the level of interest rates charged by commercial banks. The study also recommends that risk assessment in loan processing should continue to be given priority before loan approval and disbursement. Bank loan provisioning should be aligned with credit losses and uncollected loans due to non-payment. Moreover, commercial banks should match loans with repayment ability to minimize loan defaults. Commercial banks should ensure they rely on the customer's previous record on determination of the loan sizes for due diligence process in assessing the repayment abilities of the clients.

### 5.3.1 Suggestions for Further Research

The study recommends that a longitudinal study should be conducted on how interest rates spreads leads to non-performing loans and their impact on the performance of commercial banks.

### 5.3.2 Managerial Implications

The study recommends that the management of commercial banks put in place measures to gain a competitive edge. The bank

management should implement thorough and stronger credit administration mechanisms and policies to reduce the level of defaults. The banks should re-strategize on their ways of loan collection. Risk assessment in loan processing should be given greater priority before approving loans to ensure there is a reduction in the number of non-performing loans.

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